AGENCY USE ONLY				
PERMIT NO.:	Date Rec'd.:	Amount Rec'd.:	Check No.:	Rec'd By:
MTG 010255	10/29/13	$600	52500	OD

Montana Department of
ENVIRONMENTAL QUALITY
WATER PROTECTION BUREAU

FORM **NOI**

Notice of Intent (NOI) for Montana Pollution Discharge Elimination System Application for New and Existing Concentrated Animal Feeding Operations

The Application form is to be completed by the owner or operator of a Concentrated Animal Feeding Operation (CAFO) or Aquatic Animal Production Facility. Please read the attached instructions before completing this form. You must print or type legibly; forms that are not legible or are not complete will be returned. You must maintain a copy of the completed application form for your records.

Section A - Application Status *(Check one):*

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- ☐ New — No prior application submitted for this site.
- ☐ Resubmitted — Permit Number: MTG _ _ _ _ _ _ _
- ☑ Renewal — Permit Number: MTG 0 1 0 2 5 5
- ☐ Modification — Permit Number: MTG _ _ _ _ _ _ _

Section B - Facility or Site Information (*See instruction sheet.):*

Site Name Vermilion Ranch-McGirl Lot 10/30/13

Site Location McGirl Rd

Nearest City or Town Huntley, MT County Yellowstone

Latitude 45 deg 53' 11.48" N Longitude 108 deg 21' 21.74" W

Date Facility began operation? 1970

Is this facility or site located on Indian Lands? ☐ Yes ☑ No

Section C - Applicant (Owner/Operator) Information:

Owner or Operator Name Patrick Goggins--Robert Cook, General Manager

Mailing Address P.O. Box 30758

City, State, and Zip Code Billings, MT 59107

Phone Number 406-245-6447

Is the person listed above the owner? ☑ Yes ☐ No

Status of Applicant *(Check one)* ☐ Federal ☐ State ☑ Private ☐ Public ☐ Other (specify) _____

Section D - Existing or Pending Permits, Certifications, or Approvals: ☐ None

☑ MPDES MTG010255 ☐ RCRA _____

☐ PSD (Air Emissions) _____ ☐ Other _____

☐ 404 Permit (dredge & fill) _____ ☐ Other _____

Section E – Standard Industrial Classification (SIC) Codes:

Provide at least one SIC code which best reflects the activity of project described in Section H.			
Code	**A. Primary**	**Code**	**B. Second**
1	0211 Beef Cattle Holding Facility	2	
Code	**C. Third**	**Code**	**D. Fourth**
3		3	

Section F - Facility or Site Contact Person/Position:

Name and Title, or Position Title Robert Cook, General Manager

Mailing Address P.O. Box 30758

City, State, and Zip Code Billings, MT 59107

Phone Number 406-245-6447

Section G – Receiving Surface Waters(s):

Outfall/Discharge Locations: For each outfall, List latitude and longitude to the nearest second and the name of the receiving waters

Outfall Number	Latitude	Longitude	Receiving Surface Waters
001	45 53'15.71"N	108 21'21.79"W	Miller McGirl Ditch
002	45 53'40.53"N	108 20'43.05"W	Twelve Mile Creek
003	45 52'50.88"N	108 20'40.52"W	Yellowstone River
004			
005			

Map: Attach a topographic map extending one mile beyond the property boundaries or the site activity identified in Section B depicting the facility or activity boundaries, major drainage patterns, and the receiving surface waters, stated above. Also identify the specific location of the production area, and land application area(s).

Is the receiving water on the 303(d) list for nutrients (nitrogen and/or phosphorus) ☐ Yes ☑ No

Section H – Concentration Animal Feeding Operation Characteristics

Waste Production, Storage and Disposal

Animal type	Number in Open Confinement	Number Housed Under Roof
☐ Mature Dairy Cows		
☐ Dairy Heifers		
☐ Veal Calves		
☑ Cattle (not dairy or veal)	400	
☐ Swine (55 lbs or over)		
☐ Swine (55 lbs or under)		
☐ Horses		
☐ Sheep or Lambs		
☐ Turkeys		
☐ Chickens (broilers)		
☐ Chickens (layers)		
☐ Ducks		
☐ Other (Specify:_____)		
☐ Other (Specify:_____)		
☐ Other (Specify:_____)		

Manure, Litter and/or Wastewater Production and Use.

How much manure, litter, and process wastewater is generated annually by the facility?

Solid (tons):36 Liquid/Slurry (gallons):0

If land applied, how many acres of land under control of the permit applicant are available to apply the manure, litter, or process wastewater generated from the facility? (Note: Do not include setback distances in available acreage

47 Acres

How much manure, litter, and process wastewater is transferred to other persons per year? (estimated) Solid (tons):0 Liquid/Slurry (gallons):0

Were the containment structures built after February 2006? Yes

- ☑ Do the waste containment structures have 10 feet of separation between the pond bottom and any bedrock formations? Yes
- ☑ Do the waste containment structures have 4 feet of separation from the pond bottom and any ground water? Yes
- ☑ Were any of the waste containment structures built within 500 feet of any existing well? No

	Type of Containment/Storage	Total Capacity	Units (gallons or tons)	Days of Storage
☐	Anaerobic Lagoon			
☑	Storage Pond #1	100,980	gallons	
☑	Storage Pond #2	224,400	gallons	
☐	Storage Pond #3			
☐	Storage Pond #4			
☐	Storage Pond #5			
☐	Above Ground Storage Tank			
☐	Below Ground Storage Tank #1			
☐	Below Ground Storage Tank #2			
☐	Underfloor Pits			
☐	Roofed Storage Shed			
☐	Concrete Pad			
☐	Impervious Soil Pad			
☐	Other (Specify:_____)			
☐	Other (Specify:_____)			

Physical Data for CAFO

Nutrient Management Plan

All Concentrated Animal Feeding Operations seeking permit coverage after July 31, 2007 are required to complete and implement a Nutrient Management (NMP). The NMP must be submitted to the Department using the form provided by the Department (Form NMP). Check the box below that applies and provide the required information. The NMP must be developed in accordance with ARM 17.30.1334 and implemented upon the effective date of permit coverage. (Check One)

☑ Does the facility have an NMP?

Date NMP was developed: November 2008

Date NMP was last modified: September 2013

☐ NMP has not been prepared; provide detailed explanation below

Section I – Supplemental Information

Section J - CERTIFICATION

Permittee Information:

This Form NMP must be completed, signed, and certified as follows:

- For a corporation, by a principal officer of at least the level of vice president;
- For a partnership or sole proprietorship, by a general partner or the proprietor, respectively; or
- For a municipality, state, federal, or other public facility, by either a principal executive officer or ranking elected official.

All Permittees Must Complete the Following Certification:

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information; including the possibility of fine and imprisonment for knowing violations. [75-5-633, MCA]

A. Name (Type or Print)	
Robert Cook	
B. Title (Type or Print)	**C. Phone No.**
General Manager	245-6447
D. Signature	**E. Date Signed**
Robert B Cook	10-28-13

The Department will not process this form until all of the requested information is supplied, and the appropriate fees are paid. Return this form (NOI) and the applicable fee to:

Department of Environmental Quality
Water Protection Bureau
PO Box 200901
Helena, MT 59620-0901
(406) 444-3080

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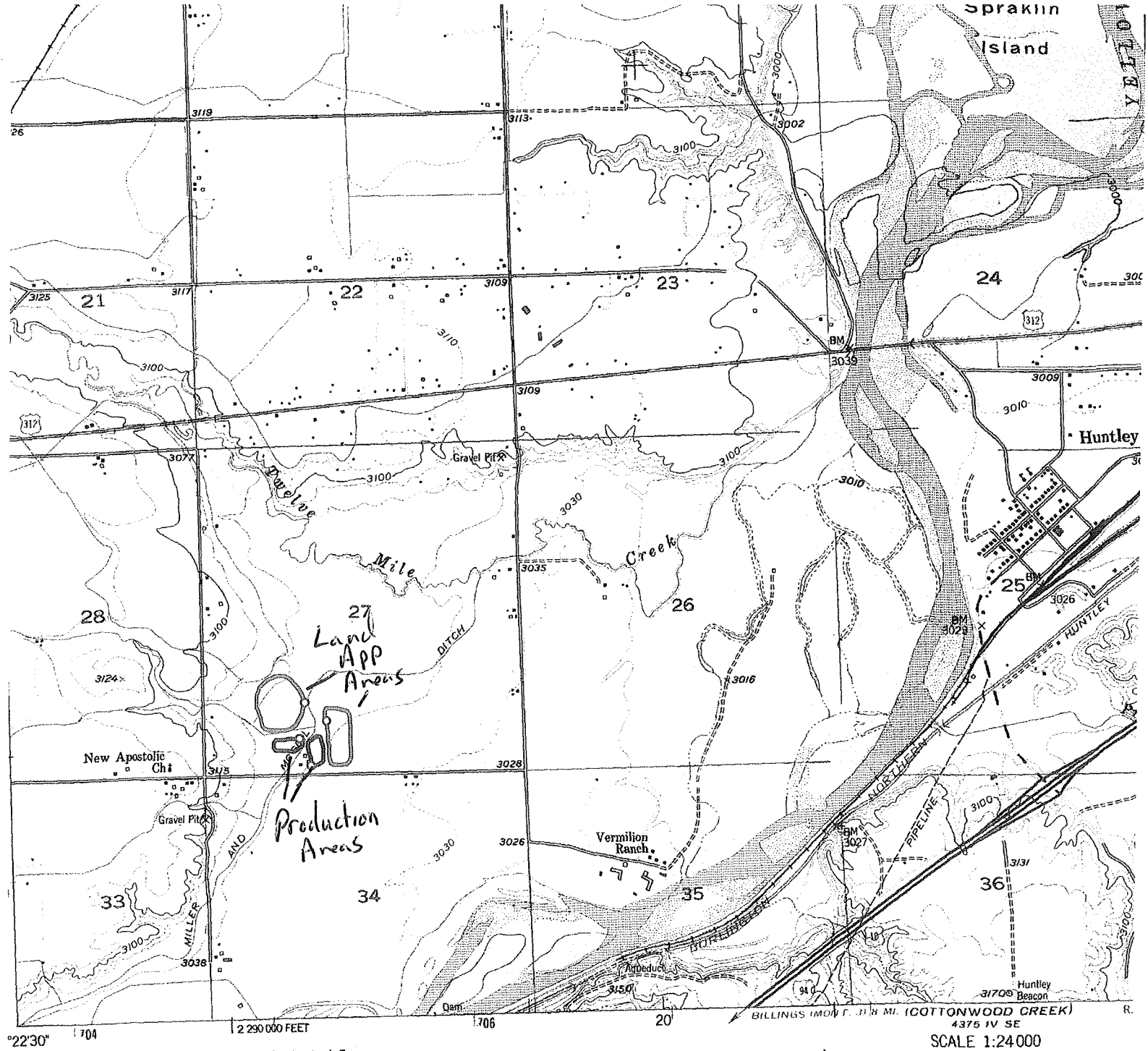


°22'30" 704 2 290 000 FEET 706 20'

Mapped, edited, and published by the Geological Survey as part of the Department of the Interior program for the development of the Missouri River Basin

Control by USGS and NOS/NOAA

Topography from aerial photographs by photogrammetric methods and by planetable surveys 1956. Aerial photographs taken 1951

Polyconic projection. 1927 North American datum
10,000-foot grid based on Montana coordinate system, south zone
1000-meter Universal Transverse Mercator grid ticks, zone 12, shown in blue

Revisions shown in purple and recompilation of woodland areas compiled from aerial photographs taken 1969 and 1975. This information not field checked

GN MN
1°56' 34 MILS
16° 284 MILS

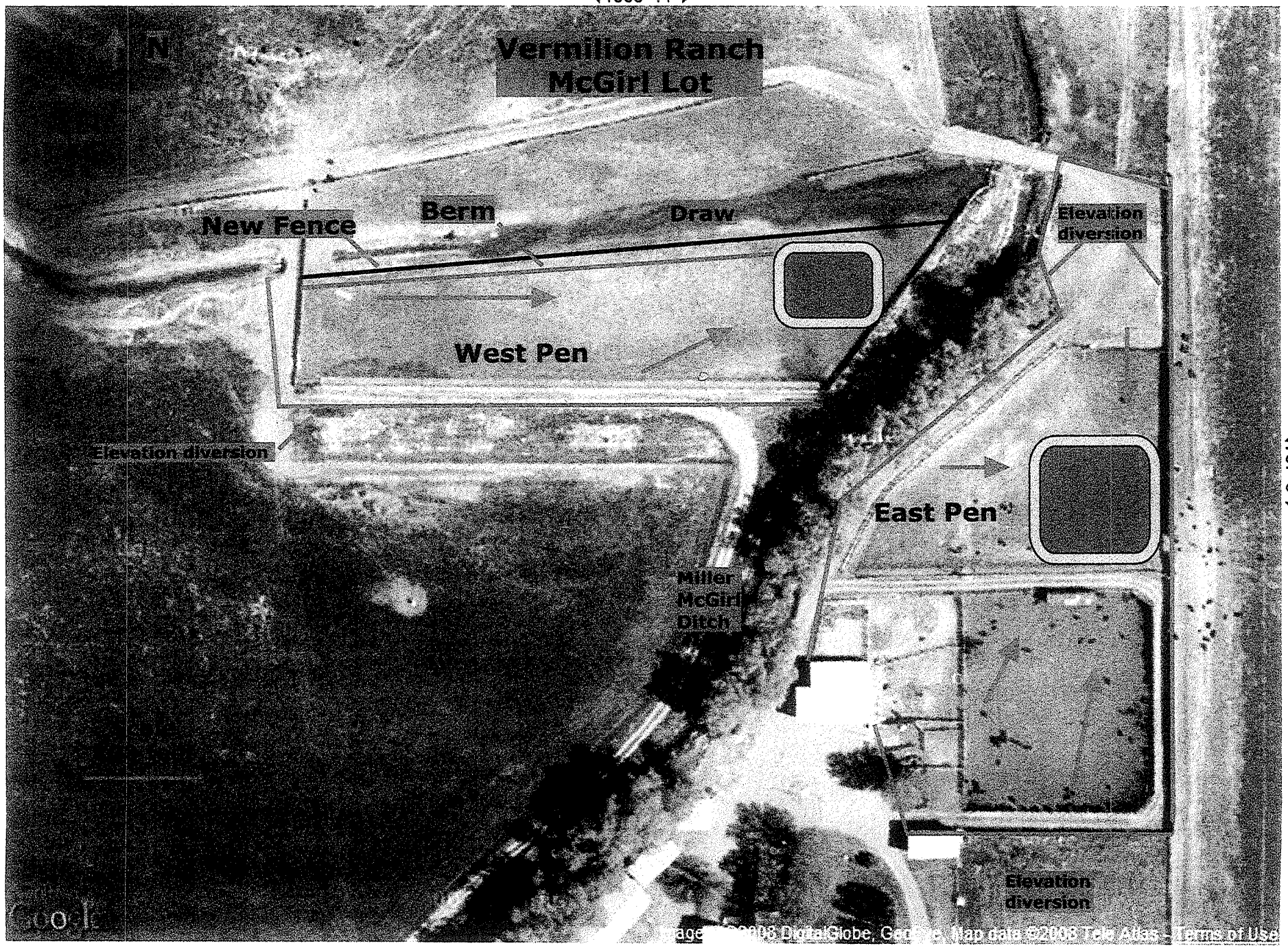
UTM GRID AND 1975 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

SCALE 1:24000

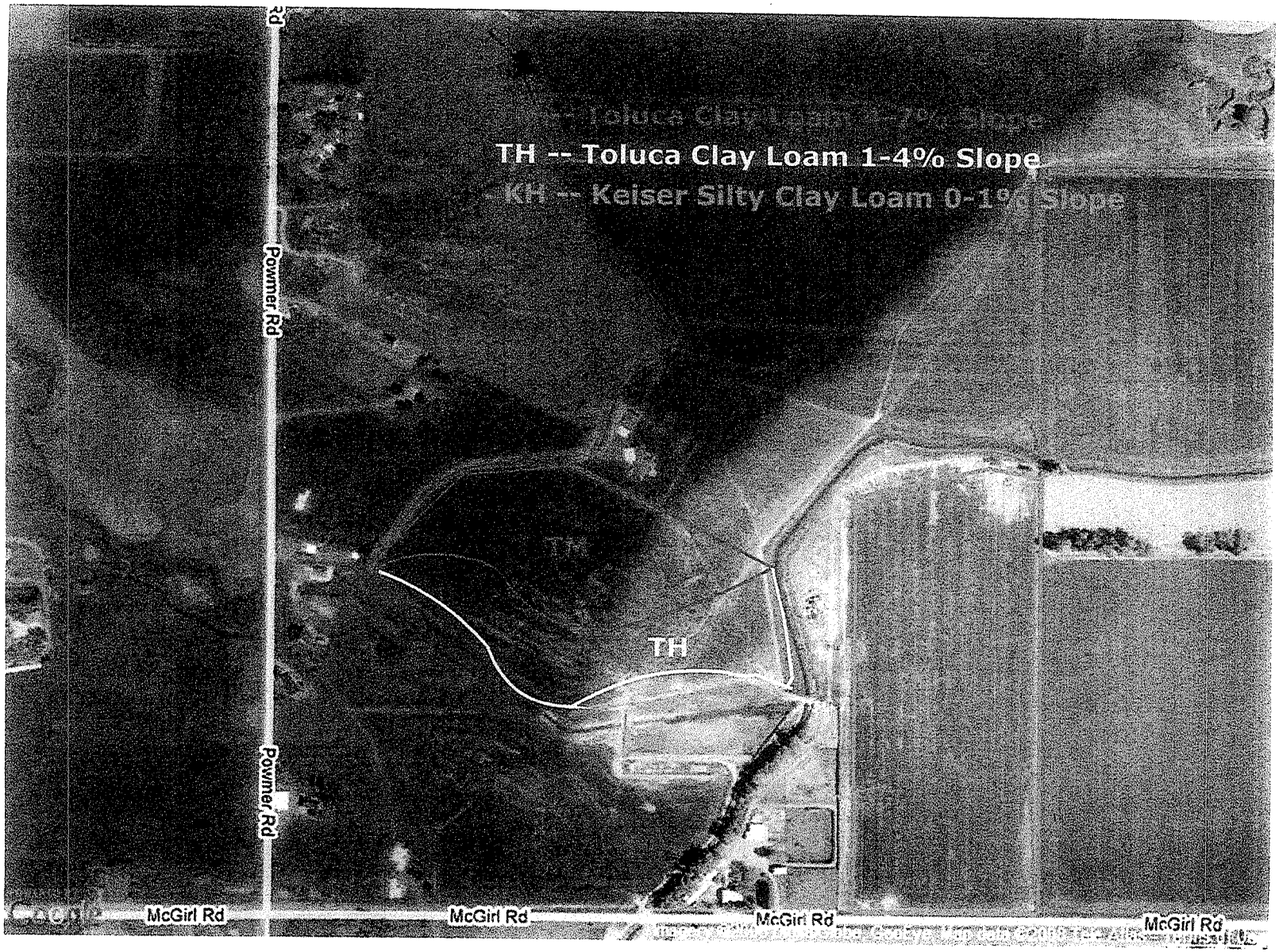
1 0 1/2
1000 0 1000 2000 3000 4000 5000
1 .5 0

CONTOUR INTERVAL 20 FEET
DOTTED LINES REPRESENT 10-FOOT CONTOU
NATIONAL GEODETIC VERTICAL DATUM OF 19

THIS MAP COMPLIES WITH NATIONAL MAP ACCURACY
FOR SALE BY U. S. GEOLOGICAL SURVEY, DENVER, COLORADO 80225, (
A FOLDER DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVA

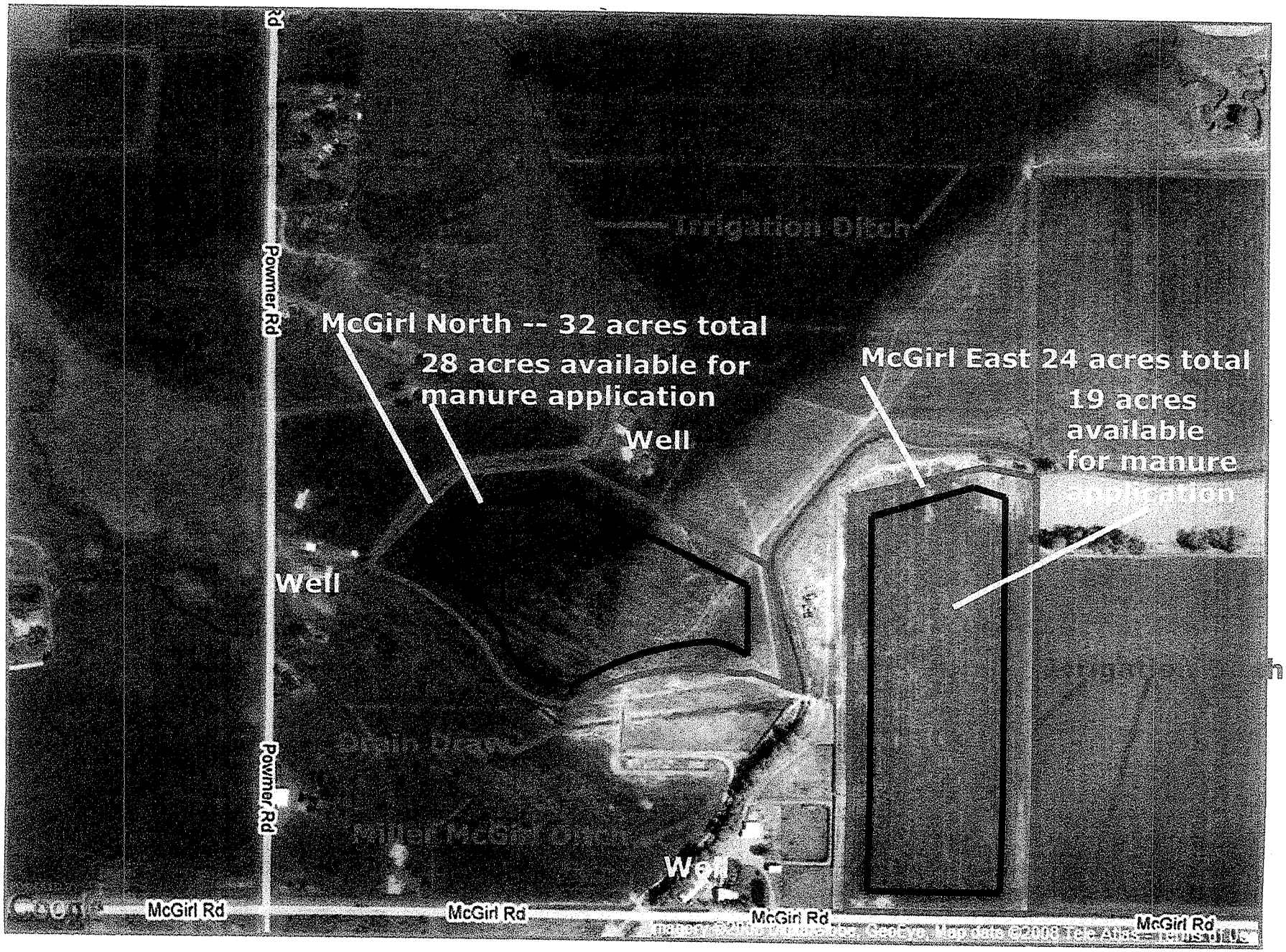

1063' 11"
N
Vermilion Ranch
McGirl Lot
New Fence
Berm
Draw
Elevation diversion
West Pen
Elevation diversion
East Pen
Miller
McGirl
Ditch
Elevation diversion
797' 6"
Image © 2008 DigitalGlobe, GeoEye, Map data ©2008 Tele Atlas - Terms of Use

Vermilion McGirl Manure Application Area Soil Types



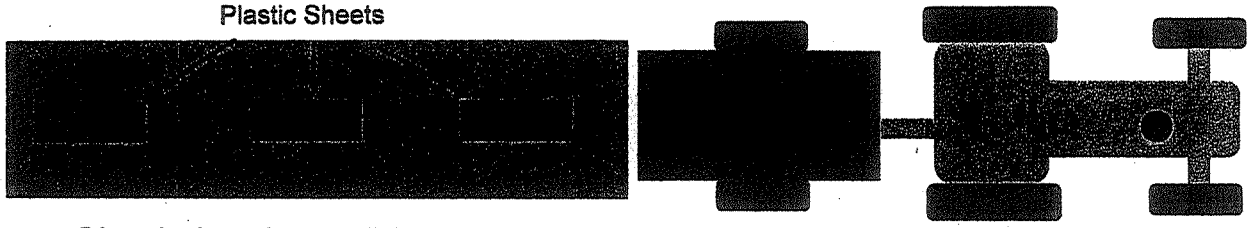
United States Department of Agriculture
Soil Survey of Yellowstone County, Montana

Vermilion McGirl - Manure Application Area



Calibration of Rear Discharge "Box" Spreader if Capacity is Unknown.

a. Cut three or more sheets of equally sized plastic. 22 square feet (3' x 7'4" or 4' X 5'6") is preferred size.
b. Weigh empty 5 gallon bucket plus one plastic sheet on a scale: _____ lbs.
c. Lay sheets in field with edges secured by stones or other heavy objects.
d. Drive tractor at normal speeds and discharge manure at typical rates over plastic sheets.
   Record tractor gear: _____, engine RPM: _____ , and spreader settings: _____



e. Check the sheet. Did a reasonably representative application rate fall on the plastic sheet?
f. Carefully fold individual sheets without losing manure and place each sheet in separate buckets.
   Weigh each bucket. Bucket 1: _____lbs. Bucket 2: _____lbs. Bucket 3: _____lbs.
g. Subtract weight of empty bucket and plastic (step b) to determine net manure weight is each bucket.
   Net manure weight for Bucket 1: _____lbs. Bucket 2: _____lbs. Bucket 3: _____lbs.
h. Calculate average weight of buckets. Average Net Manure Weight: _____lbs.
i. Calculate application rate. Tons per Acre = (Net Manure Weight X 22) ÷ area of plastic sheet (ft^2)

If plastic sheet = 22 ft^2, then Tons per Acre = Net Manure Weight

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PERMIT NO.: MTG010255	Date Rec'd.: 10/29/13	Amount Rec'd.: $600	Check No.: ✓ #52500	Rec'd By: DD

Montana Department of
ENVIRONMENTAL QUALITY
WATER PROTECTION BUREAU

FORM **NMP**

Nutrient Management Plan

READ THIS BEFORE COMPLETING FORM: Before completing this form (Form NMP), Concentrated Animal Feeding Operation (CAFO) operators need to read the General Permit, particularly Part IV.A. CAFO operators also need to read the "Instructions For filling out Form NMP," found at the back of this form. Form NMP is intended to help CAFO operators develop a site-specific Nutrient Management Plan, in compliance with Part IV.A of the General Permit and all applicable State rules and statutes. Your Nutrient Management Plan must be maintained at the site as required in Part III of the General Permit. Sections B and C on your Form NMP must state the information exactly the same way as it was stated on the most recently submitted version of your NOI-CAFO. Attach additional pages as necessary, indicating the corresponding section number on this NMP form. The 2013 General Permit, current fee schedule, and related forms are available from the Water Protection Bureau at (406) 444-3080 or http://www.deq.mt.gov/wqinfo/MPDES/CAFO.asp

Section A – NMP Status:

- ☐ New — No prior NMP submitted for this site.
- ☐ Resubmitted — Previous NMP found incomplete.
- ☑ Modification — Change or update to existing NMP.
- ☐ New 2013 — New 2013 version of NMP.

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Section B – Facility Information:

Facility Name: Vermilion Ranch--McGirl Lot

Facility Location: McGirl Rd 45 53'11"N 108 21'24"W

Nearest City of Town: Huntley County: Yellowstone

Section C – Applicant (Owner/Operator Information):

Owner or Operator Name: Patrick Goggins--Robert Cook General Mgr

Mailing Address: P.O. Box 30758

City, State, and Zip code: Billings, MT 59107

Facility Phone Number: 406-245-6447

Email:

3. Waste Control Structures					
Waste Control Structures (name/type)	**Length (ft.)**	**Width (ft.)**	**Depth (ft.)**	**Volume (cubic ft. or gallons)**	**Number of days of storage**
1. East Pen Pond	100	100	3	30,000 cu ft	365
2. West Pen Pond	75	60	3	13,500 cu ft	365
3. West Pen Berm	375	2	2 height	NA	
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					

What is the 24 hr. 25 yr. storm event at this facility 2.7 inches

Production area: 4.02 **acres. Type of lot (dirt or paved):** dirt

Area contributing drainage form outside CAFO that enters confinement areas and waste storage, conveyance, or treatment structures: 0 **acres.**

What is the annual precipitation during the critical storage period 6

How much freeboard do the pond(s) have 1 foot

4. Disposal of Dead Animals.

Describe how dead animals are disposed of at this facility:
Dead animals are hauled to City of Billings Landfill

5. Clean Water Diversion Practices

Describe how clean water is diverted from production area:
Elevation diversion exists on both the south and west ends of the west pen, preventing clean water from entering the production area. Berm on the north side of the west pen prevents clean water from entering the production area. Miller McGirl ditch prevents clean water from entering the east side of the west pen. Elevation diversions prevent clean water from entering the east pen on all sides.

6. Prohibiting Animals and Wastes from Contact with State Waters

Describe how animals and wastes are prohibited from direct contact with state waters:
Both the drain draw and Miller McGirl ditch are fenced to prevent animals from having direct contact with state waters.

Describe how Chemicals and other contaminants are handled on-site:
All ranch chemicals are stored off-site. No pesticides are stored on site. Any necessary pesticides are used according to label directions. All feed equipment is maintained to minimize risk of spills or leaks.

7. Best Management Practice (BMPS)

Describe in detail all temporary, permanent and structural BMPS which will be used to control runoff of pollutants from facility's production area. Indicate the location of these measures. If BMPS are not installed include a schedule for implementation of each of these measures. Examples of BMP measures could include but are not limited to: constructing ditches, terraces,, and waterways above and open lot to divert clean water run on; installing gutters, downspouts and buried conduits to divert roof drainage; providing more roofed area: decreasing open lot surface area; repairing of adjusting water systems to minimize water wastage; using practical amounts of water for cooling purposes; recycling water if practical and applicable.

Production Area BMP's
Elevation diversions prevent run-on into east pen. Elevation diversion, berm, and ditch prevent run-on into west pen. Watering systems are maintained to eliminate run-over. Natural and man-made windbreaks minimize snow accumulation in pens. All are permanent structures.

Describe in detail all temporary, permanent and structural Best Management Practices (BMPs) which will be used to control runoff of pollutants from facility's land production area. Indicate the location of these practices. If not already in use, include a schedule for implementation of each of these measures. Attached details and specifications may be used to supplement this description. Examples of BMP measures could include but are not limited to: maintaining setbacks from surface waters for manure applications; managing irrigation practices to prevent ponding of wastewater on land application sites;

never spray irrigating waste on to frozen ground: consulting with the Department prior to applying any liquid waste to frozen or snow-covered ground; applying wastes at agronomic rates.

Land Application BMP's

Manure is applied to fields in Sept-October. Manure is not applied within 100 foot setback of all state waters or conveyance systems. Fields are not irrigated after manure application. The next irrigation occurs approximately 9 months after manure application and manure harrowing. All manure is applied at agronomic rates based on soil tests and crop nutrients requirements. A P index is used on each field.

Buffers	☐ Yes ☑ No	**Conservation Tillage**	☑ Yes ☐ No
Constructed Wetlands	☐ Yes ☑ No	**Grass Filter**	☐ Yes ☑ No
Infiltration Field	☐ Yes ☑ No	**Residue Management**	☑ Yes ☐ No
Set backs	☑ Yes ☐ No	**Terrace**	☐ Yes ☑ No

Other examples

8. Implementation, Operation, Maintenance and Record Keeping – Guidance

The permittee is required to develop guidance addressing implementation of NMP, proper operation and maintenance of the facility, and record keeping as described in Part 2 of the permit.

Has a guidance document been developed for the facility? ☑ Yes ☐ No

Certify the document address the following requirements:

Implementation of the NMP:	☑ Yes ☐ No
Facility operation and maintenance:	☑ Yes ☐ No
Record keeping and reporting	☑ Yes ☐ No
Sample collection and analysis:	☑ Yes ☐ No
Manure transfer	☑ Yes ☐ No

Provide name, date and location of most recent documentation:
McGirl Lot NMP and Guidance Document, September 2013, Machine Shed @ McGirl Lot.

If your answer to any of the above question is no, provide explanation:

Section E – Land Application

Will manure be land applied to land either owned, rented, or leased by the owner or operator of the facility?

☑ Yes If yes, then the information requested in Section E must be provided.

☐ No If no, then provide an explanation of how animal waste at this facility are managed.

Photos and/or Maps

Attach an aerial photograph or map of the site where manure is to be applied. (Use multiple photos/maps if necessary to show required details.) The photo(s)/map(s) must be printed on no larger than an 11"X 17" piece of paper, and must clearly identify the following items:

- Individual field boundaries for all planned land application areas
- A name, number, letter or other means of identifying each individual land application field
- The location of any downgradient surface waters.
- The location of any downgradient open tile line intake structures
- The location of any downgradient sinkholes
- The location of any downgradient agricultural well heads
- The location of all conduits to surface waters
- The specific manure/waste handling or nutrient management restrictions associated with each land application field
- The soil type(s) present and their locations within the individual land application field(s)
- The location of buffers and setbacks around state surface waters, well heads, etc.

Land Application Equipment Calibration

Describe the type of equipment used to land apply wastes and the calibration procedures:

See attached calibration protocol.

Manure Sampling and Analysis Procedures

A representative manure sample will be analyzed a minimum of once annually for Total Nitrogen, and Total Phosphorus. Analysis results will be reported in lbs/ton or lbs/1,000 gal. Results of these analyses will be used in determining rates for manure, litter, and process wastewater.

Manure Sample collection will occur according to ARM 17.30.1334

Other (describe)

Soil Sampling and Analysis Procedures

Representative soil (composite) samples from the top 6 inches layer of soil for each field where manure will be applied must be analyzed for phosphorus content at least once every three years. Analyses will be conducted by a qualified laboratory, using the Olsen P test. Results will be reported in parts per million (ppm) and will be used in determining application rates for manure, litter, and process wastewater

Soil samples collection will occur according the methods in ARM 17.30.1334

Other (describe)

Phosphorus Risk Assessment

The permittee shall access the risk of phosphorus contamination of state waters. An assessment shall be conducted for each field, under the control of the operator, to which manure, litter or process wastewater will or

may be applied. If a new field is added in the future, then the permittee must submit a revised (modified) NMP. The permittee has the option of using Method A or Method B (below) to complete the assessment. Copies of all tables and calculations used to complete the assessments, as well as the results of the assessments, shall be submitted to the Department and copies shall be maintained on-site at the facility and available for Departmental review. The results of the assessments shall be used to determine the appropriate basis for land application of wastes from the facility.

Method Used

Indicate which method will be used to determine phosphorus application:

Method A – Representative Soil Sample

~~Method B – Phosphorus Index~~ will use P Index

Method A – Representative Soil Sample

a. Obtain one or more representative soil sample(s) from the field per 17.30.1334
b. Have the sample analyzed for Phosphorus by a qualified lab. The "Olsen P test" must be used for the analysis, and the result must be reported in parts per million (ppm)
c. Using the results of the Olsen P test, determine application basis according to the Table below.

Soil Test

Olsen P Soil Test Results (ppm)	Application Basis
<25.0	Nitrogen Needs of Crop
25.1 - 100.0	Phosphorus Needs of Crop
100.0 – 150.0	Phosphorus Needs up to Crop Removal Rate
>150.0	No Application allowed

Method B – Phosphorus Index

a. Complete a phosphorus Index according to the crop grown on each field. Complete table in Appendix A to calculate phosphorus index. For information on filling out specific sections in Appendix A, please refer to the method as described in Natural Resource Conservation Service (NRCS), Agronomy Technical Note MT-77 (rev3), January 2006.
b. Using the calculated Total Phosphorus Index Value, assign the overall site/field vulnerability to phosphorus loss according to the table below.

Total Phosphorus

Total Phosphorus Index Value	Site Vulnerability to Phosphorus Loss
<11	Low
11-21	Medium
22-43	High
>43	Very High

c. Using the calculated Site Vulnerability to Phosphorus Loss, determine the appropriate application basis according to the table below.

Site Vulnerability to Phosphorus Loss	Application Basis
Low	Nitrogen Needs
Medium	Nitrogen Needs
High	Phosphorus Need Up to Crop Removal
Very High	Phosphorus Crop Removal or No Application

The applicant has 2 ways in which to report how manure or process wastewater application rates can be reported to DEQ. will use Linear Approach

1. **Linear Approach** Expresses rates of application as pounds of nitrogen and phosphorus. CAFOs selecting the linear approach to address rates of application must include in the NMP submitted to the permitting authority the following information for each crop, field, and year covered by the NMP, which will be used by the permitting authority to establish site-specific permit terms:

- The maximum application rate (pounds/acre/year of nitrogen and phosphorus) from manure, litter, and process wastewater.
- The outcome of the field-specific assessment of the potential for nitrogen and phosphorus transport from each field. [If a state does not have an N transport risk assessment, the NMP must document any basis for assuming that nitrogen will be fully used by crops.] The CAFO must specify any conservation practices used in calculating the risk rating.
- The crops to be planted or any other uses of a field such as pasture or fallow fields.
- The realistic annual yield goal for each crop or use identified for each field.
- The nitrogen and phosphorus recommendations from in ARM 17.30.1334 (technical standard) for each crop or use identified for each field.
- Credits for all residual nitrogen in each field that will be plant-available.
- Consideration of multi-year phosphorus application. For any field where nutrients are applied at a rate based on the crop phosphorus requirement, the NMP must account for single-year nutrient applications that supply more than the crop's annual phosphorus requirement.
- All other additions of plant available nitrogen and phosphorus (i.e., from sources other than manure, litter, or process wastewater or credits for residual nitrogen).
- The form and source of manure, litter, and process wastewater to be land-applied.
- The timing and method of land application. The NMP also must include storage capacities needed to ensure adequate storage that accommodates the timing indicated.
- The methodology that will be used to account for the amount of nitrogen and phosphorus in the manure, litter, and wastewater to be applied.
- Any other factors necessary to determine the maximum application rate identified in accordance with this Linear Approach.

2. **Narrative Rate Approach**. Expresses a narrative rate of application that results in the amount, in tons or gallons, of manure, litter, and process wastewater to be land applied. CAFOs selecting the narrative rate approach to address rates of application must include in the NMP submitted to the permitting authority the following information for each crop, field, and year covered by the NMP, which will be used by the permitting authority to establish site-specific permit terms:

- The maximum amounts of nitrogen and phosphorus that will be derived from all sources of nutrients (pounds/acre for each crop and field).
- The outcome of the field-specific assessment of the potential for nitrogen and phosphorus transport from each field. The CAFO must specify any conservation practices used in calculating the risk rating.
- The crops to be planted in each field or any other uses of a field such as pasture or fallow fields, including alternative crops if applicable. Any alternative crops included in the NMP must be listed by field, in addition to the crops identified in the planned crop rotation for that field.
- The realistic annual yield goal for each crop or use identified for each field for each year, including any alternative crops identified.
- The nitrogen and phosphorus recommendations from ***[the permitting authority to specify acceptable sources]*** for each crop or use identified for each field, including any alternative crops identified.
- The methodology (including formulas, sources of data, protocols for making determination, etc.) and actual data that will be used to account for: (1) the results of soil tests required by Parts II.A.4.b and III.A.3.g of this

permit, (2) credits for all nitrogen in the field that will be plant- available, (3) the amount of nitrogen and phosphorus in the manure, litter, and process wastewater to be applied, (4) consideration of multi-year phosphorus application (for any field where nutrients are applied at a rate based on the crop phosphorus requirement, the methodology must account for single-year nutrient applications that supply more than the crop's annual phosphorus requirement), (5) all other additions of plant available nitrogen and phosphorus to the field (i.e., from sources other than manure, litter, or process wastewater or credits for residual nitrogen), (6) timing and method of land application, and (7) volatilization of nitrogen and mineralization of organic nitrogen.
- Any other factors necessary to determine the amounts of nitrogen and phosphorus to be applied in accordance with the Narrative Rate Approach.
- NMPs using the Narrative Rate Approach must also include the following projections, which will not be used by the permitting authority in establishing site-specific permit terms:

i. Planned crop rotations for each field for the period of permit coverage.
ii. Projected amount of manure, litter, or process wastewater to be applied.
iii. Projected credits for all nitrogen in the field that will be plant-available.
iv. Consideration of multi-year phosphorus application.
v. Accounting for other additions of plant-available nitrogen and phosphorus to the field.
vi. The predicted form, source, and method of application of manure, litter, and process wastewater for each crop

- If the receiving water is on the 303(d) list for nutrients then the narrative rate approach must be used.

a. For the Linear Approach the permittee will complete the Nutrient Budget Worksheet, below, for the next 5 years to which manure or process waste water is or may be applied. A copy of each Nutrient Budget Worksheet will be maintained on site, and a copy will be submitted to the Department.

Appendix A: Phosphorus Index Worksheet (Complete for each field and crop)

Field: McGirl N-20 **Crop:** Grass **Year:** 2014

Field Category Factor	None (0)	Low (1)	Medium (2)	High (4)	Very High (8)	Risk Value (0,1,2,4,8)	Weight Factor	Weight Risk
Soil Erosion	NA	<5 tons/as/yr	5-10 ton/ac/yr	10-15 tons/ac/yr	QA> 10 for erodible soils	1	X 1.5	1.5
Furrow Irrigation Erosion	N/A	Tail water recovery, QS>6 very erodible soils, or QS>10 other soils	QS> for erosion resistant soil	QS> for erodible soils	QA>6 for very erodible soils	2	X 1.5	3
Sprinkler Irrigation Erosion	All fields 0-3% slope, all sandy fields or field evaluation indicates little or no runoff large spray on silts 3-8%	Medium spray on silty soils 3-15% slopes, large spray on silty soils 8-15% slope, low spray on silt soils 3-8% large spray on clay soil 3-15% slope	Medium spray on clay soils 3-8% slopes, large spray on clay soils >15% slope, medium spray on silt soil >15% slope	Medium spray on clay soils >8% slope, low spray on clay soil 3-8% slope, low spray on silty soils >15% slopes	Low spray on clay soils >8% slopes	0	X 1.5	0
Runoff Class	Negligible	Very Low or Low	Medium	High	Very High	2	X 0.5	1
Olson Soil Test P	———	<20 ppm	20-40 ppm	40-80 ppm	>80 ppm	2	X 0.5	1
Commercial P Fertilizer Application Method	None Applied	Placed with Planter or injection deeper than 2 inches	Incorporated <3 months prior to planting or surface applied during growing season	Incorporated >3 months before crop or surface applied <3 months before crop emerges	Surface applied to pasture or >3 months before crop emerges	0	X 1.0	0
Commercial P Fertilizer Application Rate	None Applied	<30 lbs/ac P205	31-90 lbs/ac P205	91-150 lbs/ac P205	>150 lbs/ac P205	0	X 1.0	0
Organic P Source Application Method	None Applied	Injected deeper than 2 inches	Incorporated <3 months prior to planting or surface applied during growing season	Incorporated >3 months before crop or surface applied <3 months before crop.	Surface applied to pasture or >3 months before crop emerges	2	X 1.0	2
Organic P Source Application Rate	None Applied	<30 lbs/ac P205	31-90 lbs/ac P205	91-150 lbs/ac P205	>150 lbs/ac P205	4	X 1.0	4
Distance to Concentrated Surface Water Flow	>1,000 feet	200-1,000 feet, or functioning grass waterways in concentrated surface water	100-200 feet	<100 feet	0 feet or application are directly into concentrated surface water flow areas.	2	X 1.0	2
Total Phosphorus Index Value: 14.5								

Nutrient Budget Worksheet 28

Field identification: McGirl N Year: 2014 Crop: Grass

Expected Crop Yield: 5 Tons

Phosphorus index results or Phosphorus application from soil test: 14.5

Method of Application: Rear Discharge

When will application occur: Sep - Oct

Nutrient Budget			Nitrogen-based Application	Phosphorus-based Application	Source of information
1		Crop Nutrient Needs, lbs/acre	125		MSU
2	(-)	Credits from previous legume crops, lbs/ac	0		DEQ-9
3	(-)	Residuals from past manure production lbs/acre	35		DEQ-9
4	(-)	Nutrients supplied by commercial fertilizer and Biosolids, lbs/acre	50		
5	(-)	Nutrients supplied in irrigation water, lbs/acre	0		
6		**= Additional Nutrients Needed, lbs/acre**	40		
7		Total Nitrogen and Phosphorus in manure, lbs/ton or lbs/1000 gal (from manure test)	20		Test
8	(x)	Nutrient Availability factor, for Phosphorus based application use 1.0	.6		DEQ-9
9		**= Available Nutrients in Manure, lbs/ton or lbs/1000 gal**	12		
10		Additional Nutrients needed, lbs/acre (calculated above)	40		
11	(/)	Available Nutrients in Manure, lbs/ton or lbs/1000 gal (calculated above)	12		
12		**= Manure Application Rate, tons/acre or 1000 gal/acre**	3.3		

Comments:

Appendix A: Phosphorus Index Worksheet (Complete for each field and crop)

Field:		Crop:		Year:				
Field Category Factor	**None (0)**	**Low (1)**	**Medium (2)**	**High (4)**	**Very High (8)**	**Risk Value (0,1,2,4,8)**	**Weight Factor**	**Weight Risk**
Soil Erosion	NA	<5 tons/as/yr	5-10 ton/ac/yr	10-15 tons/ac/yr	QA> 10 for erodible soils	1	X 1.5	1.5
Furrow Irrigation Erosion	N/A	Tail water recovery, QS>6 very erodible soils, or QS>10 other soils	QS> for erosion resistant soil	QS> for erodible soils	QA>6 for very erodible soils	2	X 1.5	3
Sprinkler Irrigation Erosion	All fields 0-3% slope, all sandy fields or field evaluation indicates little or no runoff large spray on silts 3-8%	Medium spray on silty soils 3-15% slopes, large spray on silty soils 8-15% slope, low spray on silt soils 3-8% large spray on clay soil 3-15% slope	Medium spray on clay soils 3-8% slopes, large spray on clay soils >15% slope, medium spray on silt soil >15% slope	Medium spray on clay soils >8% slope, low spray on clay soil 3-8% slope, low spray on silty soils >15% slopes	Low spray on clay soils >8% slopes	0	X 1.5	0
Runoff Class	Negligible	Very Low or Low	Medium	High	Very High	2	X 0.5	1
Olson Soil Test P	———	<20 ppm	20-40 ppm	40-80 ppm	>80 ppm	2	X 0.5	1
Commercial P Fertilizer Application Method	None Applied	Placed with Planter or injection deeper than 2 inches	Incorporated <3 months prior to planting or surface applied during growing season	Incorporated >3 months before crop or surface applied <3 months before crop emerges	Surface applied to pasture or >3 months before crop emerges		X 1.0	
Commercial P Fertilizer Application Rate	None Applied	<30 lbs/ac P205	31-90 lbs/ac P205	91-150 lbs/ac P205	>150 lbs/ac P205	0	X 1.0	0
Organic P Source Application Method	None Applied	Injected deeper than 2 inches	Incorporated <3 months prior to planting or surface applied during growing season	Incorporated >3 months before crop or surface applied <3 months before crop.	Surface applied to pasture or >3 months before crop emerges	2	X 1.0	2
Organic P Source Application Rate	None Applied	<30 lbs/ac P205	31-90 lbs/ac P205	91-150 lbs/ac P205	>150 lbs/ac P205	4	X 1.0	4
Distance to Concentrated Surface Water Flow	>1,000 feet	200-1,000 feet, or functioning grass waterways in concentrated surface water	100-200 feet	<100 feet	0 feet or application are directly into concentrated surface water flow areas.	2	X 1.0	2
Total Phosphorus Index Value:		14.5						

Nutrient Budget Worksheet

Field identification: McGirl E Year: 2014 Crop: Grass

Expected Crop Yield: 5

Phosphorus index results or Phosphorus application from soil test: 14.5

Method of Application: Rear Discharge

When will application occur: Sep - Oct

		Nutrient Budget	Nitrogen-based Application	Phosphorus-based Application	Source of information
1		Crop Nutrient Needs, lbs/acre	125		MSU
2	(-)	Credits from previous legume crops, lbs/ac	0		DEQ-9
3	(-)	Residuals from past manure production lbs/acre	37		DEQ-9
4	(-)	Nutrients supplied by commercial fertilizer and Biosolids, lbs/acre	50		
5	(-)	Nutrients supplied in irrigation water, lbs/acre	0		
6		**= Additional Nutrients Needed, lbs/acre**	38		
7		Total Nitrogen and Phosphorus in manure, lbs/ton or lbs/1000 gal (from manure test)	20		Test
8	(x)	Nutrient Availability factor, for Phosphorus based application use 1.0	.6		DEQ-9
9		**= Available Nutrients in Manure, lbs/ton or lbs/1000 gal**	12		
10		Additional Nutrients needed, lbs/acre (calculated above)	38		
11	(/)	Available Nutrients in Manure, lbs/ton or lbs/1000 gal (calculated above)	12		
12		**= Manure Application Rate, tons/acre or 1000 gal/acre**	3.2		

Comments:

Section F - CERTIFICATION

Permittee Information: This form must be completed, signed, and certified as follows:

- For a corporation, by a principal officer of at least the level of vice president;
- For a partnership or sole proprietorship, by a general partner or the proprietor, respectively; or
- For a municipality, state, federal, or other public facility, by either a principal executive officer or ranking elected official.

All Permittees Must Complete the Following Certification:

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information; including the possibility of fine and imprisonment for knowing violations. [75-5-633, MCA]

A. Name (Type or Print) Robert Cook	
B. Title (Type or Print) General Manager	**C. Phone No.** 245-6447
D. Signature Robert B Cook	**E. Date Signed** 10-28-13

The Department will not process this form until all of the requested information is supplied, and the appropriate fees are paid. Return this form and the applicable fee to:

Department of Environmental Quality
Water Protection Bureau
PO Box 200901
Helena, MT 59620-0901
(406) 444-3080

RECEIVED
OCT 29 2013
DEQ/WPB
PERMITTING & COMPLIANCE DIV.